

IN THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A shaft coupling device which couples a first shaft and a second shaft together, comprising:

a grip unit to be attached to the first shaft and including a grip portion configured to grip the second shaft, the grip portion having an end with a plurality of grip portions forming notches of a length being parallel with an axial direction of the first shaft ~~[[and]]~~; and

a grip force acting unit to be attached to the second shaft and configured to cause a grip force for gripping the second shaft to act on the grip portion by moving each of said grip portions in a radial direction towards the second shaft~~[[.]]~~,

wherein the grip force acting unit and the grip unit can be screwably engaged with each other such that a tightening of the screwable engagement causes the plurality of the grip portions to move radially towards the second shaft.

Claim 2 (Original): The shaft coupling device according to claim 1, wherein the grip unit is detachably attached to the first shaft.

Claim 3 (Currently Amended): ~~[[The]]~~ A shaft coupling device according to claim 1, which couples a first shaft and a second shaft together, comprising:

a grip unit to be attached to the first shaft and including a grip portion configured to grip the second shaft, the grip portion having an end with a plurality of grip portions forming notches of a length being parallel with an axial direction of the first shaft; and

a grip force acting unit to be attached to the second shaft and configured to cause a grip force for gripping the second shaft to act on the grip portion by moving each of said grip portions in a radial direction towards the second shaft,

wherein the grip portion and the first shaft are one piece.

Claim 4 (Currently Amended): ~~[[The]]~~ A shaft coupling device according to claim 1,
which couples a first shaft and a second shaft together, comprising:

a grip unit to be attached to the first shaft and including a grip portion configured to grip the second shaft, the grip portion having an end with a plurality of grip portions forming notches of a length being parallel with an axial direction of the first shaft; and

a grip force acting unit to be attached to the second shaft and configured to cause a grip force for gripping the second shaft to act on the grip portion by moving each of said grip portions in a radial direction towards the second shaft,

wherein the first shaft and the second shaft have end portions, the end portions being coupled to each other and respectively inserted into a shaft center holding portion configured to hold the first shaft and the second shaft coaxially to each other, and wherein the shaft center holding portion is positioned at a distance away from a tip of the end of the grip portion, the distance being greater than the length of the notches.

Claim 5 (Original): The shaft coupling device according to claim 4, wherein the shaft center holding portion is a portion of the grip unit.

Claim 6 (Original): The shaft coupling device according to claim 1, wherein the grip force acting unit causes the grip force to act on the grip portion by abutting on the grip

portion to move the grip portion in the radial direction when the grip force acting unit is moved toward the grip unit.

Claim 7 (Currently Amended): ~~[[The]]~~ A shaft coupling device according to claim 6, which couples a first shaft and a second shaft together, comprising:

a grip unit to be attached to the first shaft and including a grip portion configured to grip the second shaft, the grip portion having an end with a plurality of grip portions forming notches of a length being parallel with an axial direction of the first shaft; and

a grip force acting unit to be attached to the second shaft and configured to cause a grip force for gripping the second shaft to act on the grip portion by moving each of said grip portions in a radial direction towards the second shaft,

wherein the grip force acting unit causes the grip force to act on the grip portion by abutting on the grip portion to move the grip portion in the radial direction when the grip force acting unit is moved toward the grip unit, and

wherein the grip force acting unit and the grip unit include screw portions, and the grip force acting unit moves toward the grip unit when the screw portions are screwed onto each other.

Claim 8 (Currently Amended): ~~[[The]]~~ A shaft coupling device according to claim 6, which couples a first shaft and a second shaft together, comprising:

a grip unit to be attached to the first shaft and including a grip portion configured to grip the second shaft, the grip portion having an end with a plurality of grip portions forming notches of a length being parallel with an axial direction of the first shaft; and

a grip force acting unit to be attached to the second shaft and configured to cause a grip force for gripping the second shaft to act on the grip portion by moving each of said grip portions in a radial direction towards the second shaft,

wherein the grip force acting unit causes the grip force to act on the grip portion by abutting on the grip portion to move the grip portion in the radial direction when the grip force acting unit is moved toward the grip unit, and

~~wherein~~ a contacting portion of the grip unit at which the grip unit contacts the grip force acting unit is tapered, and the grip force acting unit abuts on the contacting portion to move the grip portion in the radial direction when the grip force acting unit is moved toward the grip unit.

Claim 9 (Previously Presented): A shaft coupling device which couples a first shaft and a second shaft together, comprising:

a grip unit to be attached to the first shaft and including a grip portion configured to grip the second shaft, the grip portion having an end with notches of a length being parallel with an axial direction of the first shaft; and

a grip force acting unit to be attached to the second shaft and configured to cause a grip force for gripping the second shaft to act on the grip portion by moving the grip portion in a radial direction of the second shaft;

wherein the grip force acting unit is a clamp member configured to fasten the grip portion from around substantially an entire outer periphery of the grip portion.

Claim 10 (Currently Amended): A shaft coupling device that couples a first shaft and a second shaft, comprising:

a grip unit including a parallel surface parallel with a central axis of the first shaft and configured to grip the second shaft by abutting the parallel surface on the second shaft; and

a grip force acting unit configured to cause a grip force for gripping the second shaft to act on the parallel surface,

wherein the grip force acting unit moves along an outer peripheral surface of the grip unit in parallel with a central axis of the second shaft to change a pressure acting on the grip unit, and

the parallel surface of the grip unit is caused to abut on an outer peripheral surface of the second shaft by the pressure to grip the second shaft[.], and

wherein the grip force acting unit and the grip unit can be screwably engaged with each other such that a tightening of the screwable engagement causes the plurality of the grip portions to move radially towards the second shaft.

Claim 11 (Original): The shaft coupling device according to claim 10, wherein one of the first shaft and the second shaft is a rotating member supporting shaft configured to support a rotating member and another one of the first shaft and the second shaft is an output shaft of a motor configured to rotate the rotating member supporting shaft.

Claim 12 (Currently Amended): ~~[[The]] A~~ shaft coupling device ~~according to claim 11,~~ that couples a first shaft and a second shaft, comprising:

a grip unit including a parallel surface parallel with a central axis of the first shaft and configured to grip the second shaft by abutting the parallel surface on the second shaft; and

a grip force acting unit configured to cause a grip force for gripping the second shaft to act on the parallel surface,

wherein the grip force acting unit moves along an outer peripheral surface of the grip unit in parallel with a central axis of the second shaft to change a pressure acting on the grip unit,

the parallel surface of the grip unit is caused to abut on an outer peripheral surface of the second shaft by the pressure to grip the second shaft,

one of the first shaft and the second shaft is a rotating member supporting shaft configured to support a rotating member and another one of the first shaft and the second shaft is an output shaft of a motor configured to rotate the rotating member supporting shaft,
and

~~wherein~~ the grip force acting unit rotates around and moves in parallel with the central axis of the output shaft as the grip force acting unit is screwed onto the grip unit.

Claim 13 (Original): The shaft coupling device according to claim 12, wherein the grip force acting unit is rotated in the same direction as a forward rotating direction of the output shaft when the grip force acting unit is screwed onto the grip unit, such that the pressure acting on the grip unit is increased.

Claim 14 (Original): The shaft coupling device according to claim 12, wherein the output shaft includes a projecting portion on an outer periphery of the output shaft,
and

the grip force acting unit includes a groove portion configured to fit with the projecting portion.

Claim 15 (Previously Presented): An image formation apparatus comprising:
a rotating member supporting shaft configured to support a rotating member;

an output shaft of a motor configured to rotate the rotating member supporting shaft;
and

a shaft coupling device

configured to couple the rotating member supporting shaft and the output shaft, and includes

a grip unit having a grip portion to be attached to one of the rotating member supporting shaft and the output shaft to grip a remaining shaft of the rotating member supporting shaft and the output shaft wherein the grip portion has an end with a plurality of split grip portions forming notches of a length being parallel with an axial direction of the output shaft, and

a grip force acting unit to be attached to the remaining shaft to cause a grip force for gripping the remaining shaft to act on the grip portion by moving the grip portion in a radial direction of the remaining shaft wherein said grip force acting unit comprises a clamp member configured to fasten the grip portion from around substantially an entire outer periphery of the grip portion.

Claim 16 (Original): The image formation apparatus according to claim 15, wherein the rotating member supporting shaft includes

a rotating engagement member integrated with the rotating member supporting shaft and engaged with the rotating member to rotate integrally with the rotating member , and

a bearing that rotatably supports the rotating member supporting shaft, and the rotating member is attachable to and detachable from the rotating member supporting shaft.

Claim 17 (Original): The image formation apparatus according to claim 15, wherein the rotating member is a drum-shaped photosensitive member.

Claim 18 (Original): The image formation apparatus according to claim 17, comprising a plurality of the photosensitive member.

Claim 19 (Original): The image formation apparatus according to claim 15, wherein the rotating member is a belt supporting member that supports a belt so as to allow conveyance of the belt.

Claim 20 (Original): The image formation apparatus according to claim 15, wherein the motor is of a direct driving type not having a reduction mechanism.

Claim 21 (Original): The image formation apparatus according to claim 15, wherein the motor includes a planetary roller reduction mechanism.

Claim 22 (Original): The image formation apparatus according to claim 17, further comprising a structural unit

including the photosensitive member integrally assembled with at least one of a charging device, a developing device, and a cleaning device for cleaning a surface of the photosensitive member, and

being attachable to and detachable from the rotating member supporting shaft.

Claim 23 (Cancelled).

Claim 24 (Cancelled).

Claim 25 (Original): An image formation apparatus comprising:

a rotating member supporting shaft configured to support a rotating member;

an output shaft of a motor configured to rotate the rotating member supporting shaft;

and

a shaft coupling device

configured to couple the rotating member supporting shaft and the output

shaft, and

includes

a grip unit including a parallel surface parallel with a central axis of the output shaft and configured to grip the rotating member supporting shaft by abutting the parallel surface on the rotating member supporting shaft, and

a grip force acting unit configured to cause a grip force gripping the rotating member supporting shaft to act on the parallel surface,

wherein the grip force acting unit moves along an outer peripheral surface of the grip unit in parallel with a central axis of the output shaft to change a pressure acting on the grip unit, and

the parallel surface of the grip unit is caused to abut on an outer peripheral surface of the rotating member supporting shaft by the pressure to grip the rotating member supporting shaft.

Claim 26 (Original): The shaft coupling device according to claim 25, wherein the grip force acting unit rotates around and moves in parallel with the central axis of the output shaft as the grip force acting unit is screwed onto the grip unit.

Claim 27 (Original): The shaft coupling device according to claim 26, wherein the grip force acting unit is rotated in the same direction as a forward rotating direction of the output shaft when the grip force acting unit is screwed onto the grip unit, such that the pressure acting on the grip unit is increased.

Claim 28 (Original): The shaft coupling device according to claim 25, wherein the output shaft includes a projecting portion on an outer periphery of the output shaft, and
the grip force acting unit includes a groove portion configured to fit with the projecting portion.

Claims 29-31 (Canceled).

Claim 32 (Previously Presented): The image formation apparatus according to claim 15, further comprising a process cartridge, the process cartridge includes:

- a photosensitive member which is integrally assembled with at least one of
- a charging device
- a developing device, and

- a cleaning device for cleaning a surface of the photosensitive member, wherein the photosensitive member is attachable to and detachable from the image formation apparatus when the rotating member supporting shaft is still attached to the image formation apparatus.

Claim 33 (Previously Presented): The image formation apparatus according to claim 15, wherein the rotating member comprises:

a belt unit which includes a belt;

a belt supporting member configured to support the belt so as to allow conveyance of the belt;

a rotating member supporting shaft configured to support the rotating member; and

an output shaft of a motor configured to rotate the rotating member supporting shaft.